X-Ray *and* High Frequency Apparatus

MANUFACTURED BY

Victor Electric Company

MAIN OFFICE AND FACTORY

55-61 MARKET STREET, CHICAGO, ILL.

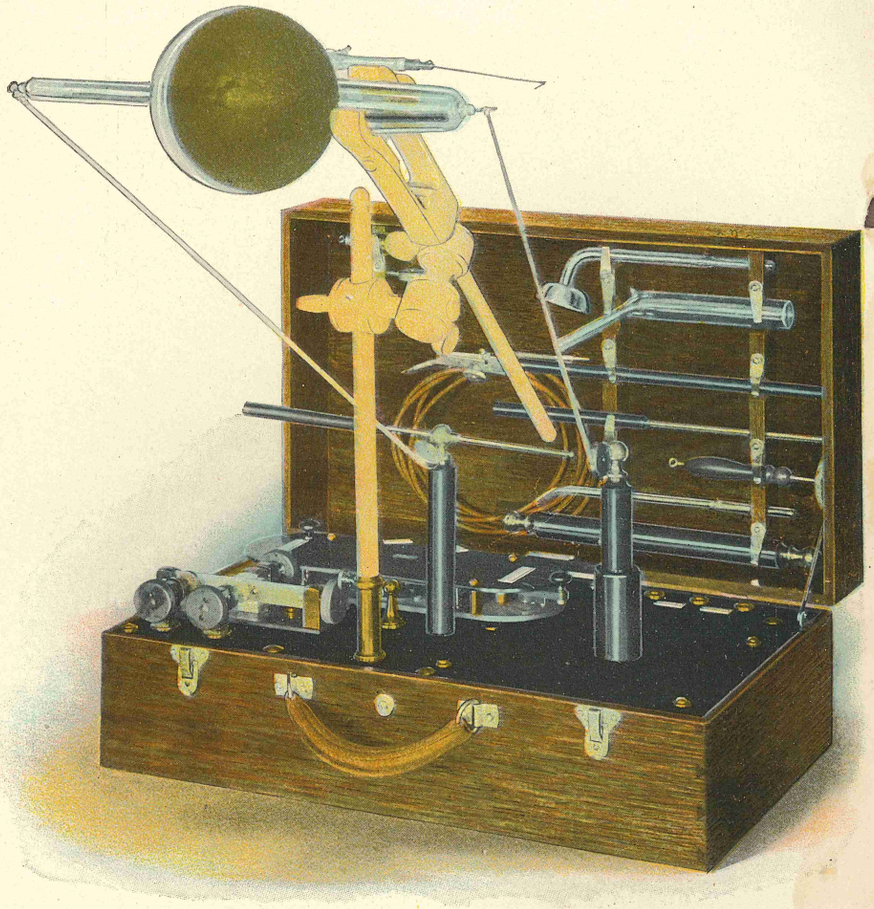
NEW YORK BRANCH:
110 East 23rd Street

PHILADELPHIA BRANCH:
411 Mint Arcade

BOSTON BRANCH:
727 Boylston Street

Victor X-Ray and High Frequency Cabinet Outfit

Manufactured by
Victor Electric Co.
Chicago



VICTOR PORTABLE X-RAY AND HIGH FREQUENCY OUTFIT

MANUFACTURED BY
VICTOR ELECTRIC CO.
CHICAGO

TERMS AND INSTRUCTIONS FOR ORDERING

All prices are for delivery F O. B. Chicago.

Freight charges from Chicago are added on deliveries made from stock by Pacific Coast dealers; this charge averages 5 per cent on catalog list.

We allow a discount of 5 per cent where no special cash price is designated in the catalog for cash with order or C. O. D.

Customers not known to us and desiring goods shipped C.O. D. must accompany order with sufficient cash to cover transportation charges. When so requested we will ship goods by express C. O. D. with privilege of examination.

We extend credit to reliable physicians who do not find it convenient to pay spot cash, but applications for credit must be accompanied by reference, as to reliability, to another manufacturer, a dealer or a local banker.

Where goods are sold on time, prices are subject to no discount, and 6 per cent interest is charged on deferred payments.

All goods are guaranteed to be exactly as represented or money refunded; there are no strings attached to this guarantee. Those unacquainted with us are referred to the R. G. Dun & Co. or Bradstreet's Mercantile Agency as to our responsibility, and if requested, we will gladly send you a list of our customers in your vicinity.

All goods cataloged are regularly carried in stock and we can usually ship on same day order is received.

Where no shipping instructions are given, orders calling for heavy goods will be sent by freight, but where express charges are only slightly in excess of freight, goods will be expressed. Very light articles such as electrodes, etc., are usually sent by mail. In ordering it is best to give catalog page as well as name of article, and if the apparatus ordered is for use on an electric lighting circuit always state whether the lighting current is direct or alternating, if direct state the voltage, if alternating state voltage and number of alternations; if in doubt, ask the lighting company.

Victor High Frequency and X-Ray Apparatus

THE clearly defined physiological effects of high frequency currents, as well as their therapeutic indications and use are thoroughly gone into in our pamphlet on the physics and therapeutic uses of high frequency currents, and we will be pleased to send it to any physician upon application, free of charge.

This pamphlet is really a condensed technique, gleaned from such authors as D'Arsonval, Strong, Snow, Crook, Geyser, Burdick, Eberhardt, Kassabian, Krenboeck and many others.

Any physician who is under the impression that there is any longer the least doubt as to the value of rapidly oscillating high tension currents in the treatment of disease is simply not abreast of the times and should consult the many sources of information open to him on this subject.

Unfortunately, the first high frequency outfits of the type we are here considering that were offered to the profession were not well adapted to X-ray work. This was due partly to imperfections in the apparatus and partly to the fact that tube manufacturers had not at that time produced properly designed tubes for use in connection with high frequency currents. This left an impression, carefully fostered by manufacturers of static machines and induction coils, that high frequency outfits are of no value in X-ray work.

Recognizing the fact that every physician should consider an apparatus for X-ray diagnosis an "essential part of his equipment," and, furthermore, realizing that many physicians could not afford, or would not care to invest in both a static machine, or coil, and a high frequency apparatus, we decided, after a thorough investigation, that it was possible to combine in a single outfit a thoroughly efficient X-ray outfit and a machine capable of delivering all of the high frequency modalities. That we have succeeded even beyond our first expectations is evidenced by the testimony of expert radiographers and many physicians of wide experience in the use of the high frequency modalities.

We are prepared to prove the truth of the foregoing to the entire satisfaction of any intending purchaser before asking or expecting him to make a purchase.

In radiography, in trunk and pelvic exposures, a little more time is required than is necessary with a large induction coil requiring a special installation and using from five to ten times the amount of current, but the resulting picture is equally good; it therefore becomes apparent that for the average physician and hospital a high frequency apparatus has a far wider range of usefulness and is more easily manipulated and with less expense and trouble. It hardly matters to the average physician or his patient whether it takes an application of a second or a few seconds to secure a certain radiograph.

With the exception of the views of the thorax and pelvis of heavy subjects, the fluoroscopic vision is fully equal to that obtained from the best type of X-Ray coils, and is sufficient for all ordinary diagnosis.

General Design.—We realized that in common with nearly all other electrical modalities, if good results are to be obtained from the therapeutic uses of high frequency currents, the operator must have an apparatus not only from which all of the high frequency modalities can be obtained, but also one which will enable him to have accurate and definite control of them.

The methods employed to obtain this control in the Victor outfits are such that the operator can obtain, with the greatest facility, control over a very wide range as to strength, potential and frequency, while at the same time the manipulation is so simplified that any intelligent operator can by following directions learn to become expert in the manipulation of even the largest and most elaborate outfit within half an hour. This point we know will be appreciated by those who have puzzled over the complicated switching and controlling mechanism employed in many outfits, in which it seemed to be the designer's idea to mount in the space allowed as many switches, regulators, etc., as could possibly be crowded into it. In many instances, these regulators and switches were practically duplicates, and so served no good purpose whatever, not even adding to the appearance of the apparatus.

Durability.—The insulation of circuits carrying high frequency, high potential currents is a problem which has tested the resources and the ability of every engineer who has attempted to confine into definite channels their immensely rapid vibrations.

The experiments in our designing department soon demonstrated that none of the methods in vogue possessed sufficient merit to be applied in the construction of such an outfit as we wished to produce. Striking out along original lines, we finally succeeded in finding materials and evolving processes which now enable us to offer the profession a high frequency outfit capable of converting and handling a great amount of energy with comparatively little danger of a breakdown of insulation. So thoroughly have we demonstrated this that we place behind our outfits a guarantee against breaking down caused by defective insulation, which eliminates any possibility of expense to the operator from this cause.

In speaking or writing of any product of the Victor factory, it is hardly necessary to touch upon the question of appearance and finish. It goes without saying that the arrangement of the various parts of the apparatus is as artistic as possible, and the finish of the highest order. The cabinet work is fully equal to that found in the very best and most expensive woodwork, and is not only of proper grain and finish, but also can be relied upon to endure for a lifetime.

High Potential Transformer.—This is the first transformer through which the current passes after entering the apparatus. Its function is to transform the low frequency alternating current to a current of very high potential, suitable for charging the condensers. This transformer has a closed magnetic circuit of the same design as those employed in large commercial power and lighting stations, having an efficiency close to ninety-six per cent. Comparing this efficiency with that of the ordinary open magnetic circuit induction coil of

the type in general use in the design of X-ray coils, the physician will be forcibly struck by the great inferiority of the old method. In an induction coil, the efficiency usually runs from fifteen to twenty per cent; in other words, only about one-fifth or one-sixth of the energy passed into the coil is delivered at the terminals. It is safe to predict that in a few years this wasteful method will become entirely obsolete.

Condenser.—In the condenser we use metal foil and the best grade of mica. We have improved in many respects upon the best methods of condenser construction so far in vogue. Judging from our experience, we believe these condensers to be practically indestructible.

The Tesla Coil or Inductor.—It is upon this very important part of the high frequency apparatus that the greatest electro-static stress falls, consequently the greatest insulation difficulties are encountered in its design. It is a comparatively easy matter to deliver to the inductor almost any amount of energy desired, as up to this point in the series of transformations the current has not passed beyond the limits of fairly controllable voltage and frequency.

In the design and construction of our inductor we have employed an original method, in the winding and placing of the inductors as well as in the method of insulation. After the inductor is wound, and each convolution of the winding separately insulated, the inductor is placed in an air-tight box and completely immersed in a homogeneous compound, from which all air has been expelled and which offers very high resistance to the passage of the current.

Spark Gap.—It is the condenser discharge of the current across the spark gap which gives to it its highly oscillatory character.

The spark discharge would, in a few moments, oxidize and completely destroy the efficiency of any of the ordinary metals. The metal employed in our spark gap stubbornly resists the destructive action of the arc and we have succeeded so thoroughly in solving this difficulty that the spark gap not only gives but very little trouble, but the metal facings used will last in ordinary service for two years or more, and their renewal is easy and comparatively inexpensive.

There is so little electro-chemical action on the spark gap faces that practically no fumes are given off while the machine is in action. Precautions are also taken to muffle the noise of the spark discharge, and this is so slight as not to be of the least annoyance.

Motor Converter.—When our large cabinet outfits are installed on the direct current, we supply a motor converter of our own manufacture, which serves the purpose of transforming the direct current to alternating current. This motor converter is placed on a shelf beneath the machine, its design and finish being sufficiently attractive so that it rather adds to the general appearance of the outfit. The best construction is used in this motor converter, including self-oiling bearings, large commutator, slotted or toothed laminated armature, and it can be depended upon to perform its function uninterruptedly for an indefinite time, with no attention aside from the occasional renewal of brushes and refilling of the oil reservoirs. Contrast this with the inevitable annoyance and expense caused by the electrolytic, or mercury interrupter necessary in the old type X-ray coil.

Interrupter or Vibrator on Direct Current Portable Outfit.—Where the portable outfit is used on the alternating current, no vibrator or interrupter is necessary. On the direct current, however, it is necessary to provide some form of interrupter.

For this purpose, we use a very stiff ribbon vibrator with tension adjustment. This vibrator is actuated by a movable core. This core is magnetized by a coil placed within the instrument, nothing but the termination of the core projecting above the surface.

Core Regulation.—We have greatly added to the range of regulation in this outfit by providing a method by means of which the core can be made to approach or recede from the vibrator. This plan not only greatly adds to the range of regulation, but practically eliminates all of the old sources of trouble in vibrator interrupters of this type.

The outfit provided with this vibrator and core regulator is acknowledged to be by far the best and most practical small outfit, either for X-ray or high frequency work, that has so far been produced.

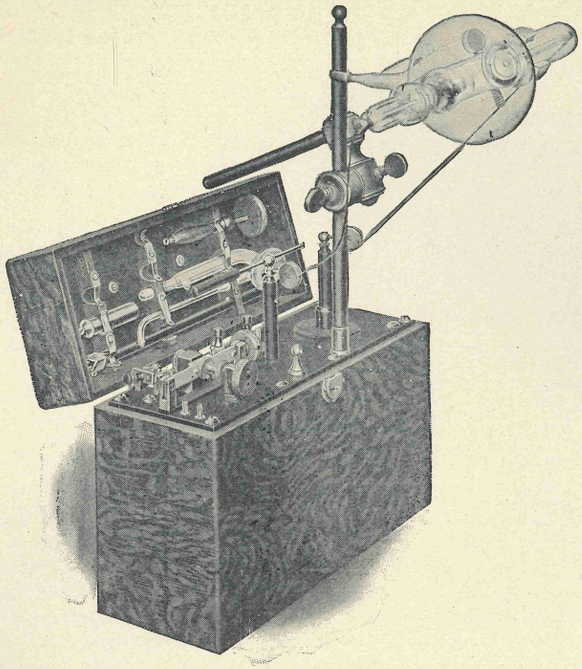
Range of Portable Outfits.— From the No. 1 portable outfits can be obtained all of the modalities delivered by the large outfit, excepting that where direct current is used, it is not possible to obtain the ultra-violet light. Manifestly, however, it is not possible to transform as great a volume of energy in the small outfit as in the large. This makes no difference in so far as the currents for local application are concerned, such as for instance, vacuum electrodes, local D'Arsonvalization, effleuve, spark, etc. The chief advantage of the large cabinet outfit over the portable outfits lies in the fact that the small outfits do not produce currents of sufficient quantity or milliampereage for thorough general D'Arsonvalization, including general auto-conduction and condensation. The potential and frequency of the currents delivered by the small outfit are just as high as in the large outfit, but, as above stated, the volume or milliampereage is not great enough for the very best results in that class of treatments designated by the term "general D'Arsonvalization."

In X-ray work, the large apparatus has some advantage over the portable machines, but the small outfits give such satisfactory results in X-ray work that it is questionable whether the operator would be warranted in incurring the additional expense of the large outfit to secure this slight advantage. The portable outfits, of course, possess the advantage that they can be taken to the patient's bedside, a feature that will be greatly appreciated by the general practitioner.

If, however, the physician wishes to completely cover in his work the entire field in which high frequency currents are indicated and to obtain the best possible results, we should recommend the purchase of the larger outfit.

Ultra-Violet Lamp Current.—The ultra-violet light is the modality made famous by Finsen. The ultra-violet rays for therapeutic purposes are ordinarily obtained from some form of arc lamp operated on low voltage circuits, in which electrodes are burned, composed of a greater or lesser per cent of iron. The light produced in this way is fairly rich in ultra-violet rays, but cannot be compared with the rays produced by the sparking arc available from our large outfit. The light thus produced is almost pure ultra-violet in character, free from heat, and is indicated in a number of conditions, more especially in skin diseases.

VICTOR No. 5 TREATMENT OUTFIT



Range of No. 5 Treatment Outfit—While this apparatus will transform as much energy as many small coils that are sold for X-Ray work, including Radiography, we do not recommend it to the physician who desires to possess a practical X-Ray equipment, nor to those who wish to give general Auto Condensation; it will, however, answer every purpose in vacuum electrode work, local Auto Condensation and Conduction, as well as giving satisfactory X-Rays for treatment and for taking skiagraphs of the arms and legs in fracture cases, etc.

The potential is sufficient to break down an air gap of approximately four inches, and the milliamperage great enough to excite a six inch X-Ray Tube of moderately high vacuum.

The same careful attention is given to secure perfect insulation in the No. 5 machine as in the larger ones, and being designed and built much on the same principle, there is the same freedom from annoyance due to interrupter and vibrator trouble. As to durability, a break down or burn out is next to impossible, so thoroughly safe guarded is every part likely to be subjected to unusual stress or strain.

This treatment outfit is just the thing for the eye, ear, nose and throat specialist, and for all specialists who have to deal chiefly with local conditions.

The dentist will find it admirably suited to the high frequency treatment of Pyorrhœa Alveoloris and other diseases of the oral cavity; excellent radiographs of the jaws can be obtained with short exposure.

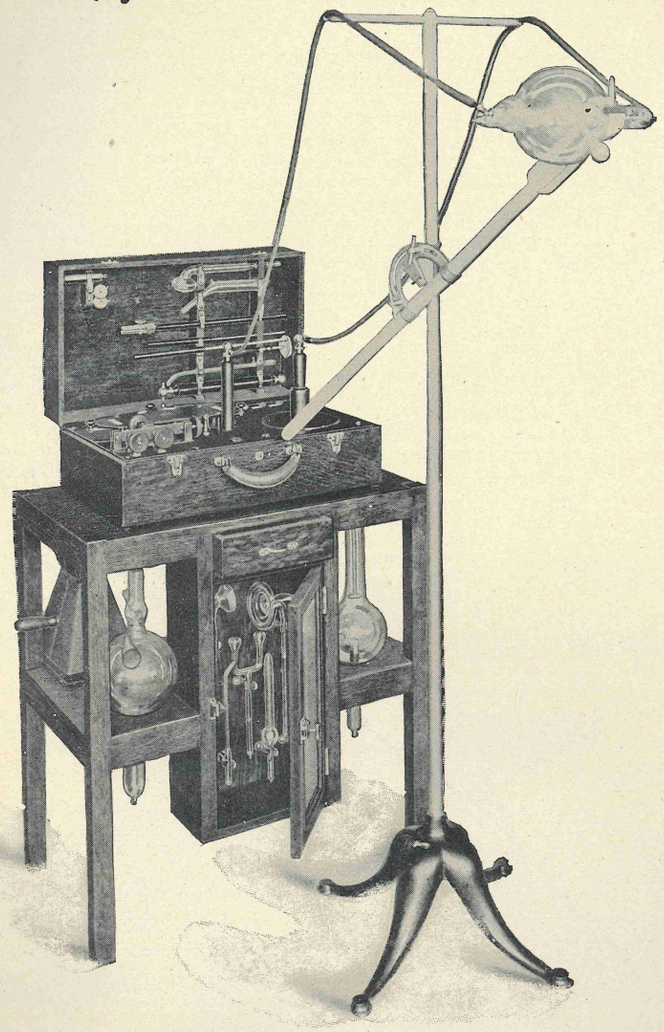
This apparatus is in no sense a toy; it is substantially constructed, and handles far more energy than any of the so called oscillators, treatment coils, etc., which for the most part give just enough energy to glow vacuum electrodes, but not enough to produce any appreciable physiological effect.

Owing to the extremely high frequency of the current delivered, and to the accurate control which the operator is able to obtain, the application in vacuum electrode treatments may be made absolutely painless, even when a very effective volume of current is being passed.

The No. 5 High Frequency Outfit weighs thirty pounds; is housed in a quartered oak case with piano finish; all metal parts well finished in gold lacquer and nickel; all switches and working parts are suitably labeled; in fact it is as perfect and satisfying a piece of apparatus as ever left the Victor work shop.

The No. 5 Coil can be operated on any electric lighting current, either direct or alternating.

Victor X-Ray Combination Cabinet Stand



Price of Victor X-Ray Combination Cabinet Stand.....**$30.00**

(For prices of Portable Coil, fluoroscope, tubes and tube stand see our Price List.)

In order to add to the utility and convenience of the Victor Portable Coils we have designed the above Cabinet and Stand, upon which the Coil is placed when in service in the office or operating room. This combination makes a complete, harmonious and convenient office equipment.

As will be seen two X-Ray tubes may be securely kept within easy reach, there is room for the fluoroscope where it is always safe from accident; the vacuum electrodes are placed in the enclosed cabinet having plate glass paneled door, the vacuum electrodes are held in position by spring clips from which they are easily withdrawn and as easily replaced. A drawer is provided for the cords and small accessories.

The Cabinet Stand is substantially constructed of selected oak, finely finished to harmonize with the cases of the coils.

PRICE LIST OF VICTOR HIGH FREQUENCY AND X-RAY OUTFITS

Portable Outfit for Direct Current **$160.00**
Portable Outfit for Alternating Current..... **160.00**
Portable Outfit arranged to operate on both Direct and Alternating Currents, (the above three outfits are type No. 1) **185.00**
Treatment Outfit No. 5, for both Direct and Alternating Currents.... **75.00**
Large Cabinet Outfit for Alternating Current..... **435.00**
Large Cabinet Outfit for Direct Current..... **515.00**

$10.00 may be deducted from prices of No. 1 Portable Outfits for cash.

Price of Treatment Outfit and Large Cabinets subject to 5% discount for cash.

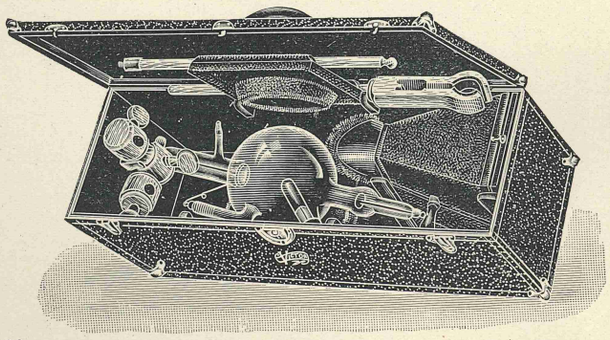
All necessary attachment cords and electrode connecting cords are included with all machines; three vacuum electrodes, an electrode holder, a sponge and metal electrode for D'Arsonval applications are given with the portable coils. The same accessories with the addition of two vacuum electrodes, making five in all are given with the Large Cabinets.

ROTARY CONVERTERS

In cases where the Operator has direct current only available or where he has both direct and alternating, and prefers to use the alternating current type of portable coil because of its simplicity and ease of manipulation, we are prepared to furnish Rotary Converters to transform direct to an alternating current. We do not recommend this plan as our combination coils for D. C. and A. C. are self contained and entirely practical, nevertheless, as the Rotary Converters are a regular stock article with us, we shall be pleased to accommodate any of our customers who may prefer this plan.

Price of small 110-volt Rotary sufficient output for all treatment and ordinary X-Ray work..... **$30.00**
Price of large 110-volt Rotary sufficient output for heaviest X-Ray work of which the portable coil is capable **45.50**

CARRYING CASE FOR TUBE, FLUOROSCOPE AND TUBE HOLDER



Price of Case..... **$7.50**

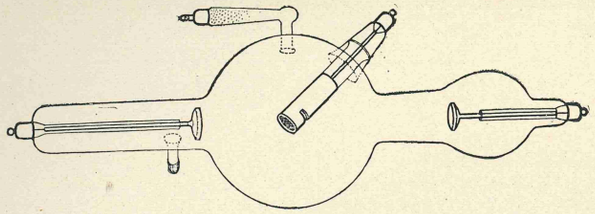
Illustration shows a substantially made though light carrying case with interior suitably arranged to contain an X-Ray tube, a 5 x 7 Fluoroscope and a Victor X-Ray Tube Holder for the Portable Coils. The utility of this case as a means for safely and conveniently transporting that part of the X-Ray equipment, which it is not possible to place in the Portable Coil Case, will be at once apparent.

PROTECTING CASES FOR PORTABLE COILS

The cases containing or housing the portable coils are given a very fine piano finish, and to protect and prevent marring of this finish while the coils are being carried about, we are prepared to furnish an outer protecting case made of fibre and leather, made to neatly fit the wooden case and completely protect it.

Price..... **$4.50**

X-RAY TUBES



Victor Special for high frequency 6 in. diameter heavy target **$20.00**
Victor Special " " " 6 in. diameter light target..... **16.00**
Victor 5¼ in. diameter for treatment work **14.00**
Victor 5 in. diameter, heavy target tube (designed especially for No. 5 coil) **18.00**

We do not guarantee the safe delivery of X-Ray Tubes, but we are prepared to *insure* safe delivery at a cost of 5% of the purchase price of Tube.

Special heavy connecting cords, including metal terminals, 4 feet per pr..... **1.50**
Lead X-Ray protection foil, per lb ..... **.25**

We are prepared to supply X-Ray tubes of other makes and all X-Ray supplies at manufacturers' prices.

X-RAY PLATES

We carry the best grade of X-Ray Plates, in the sizes listed below, in stock for immediate delivery. Prices on other sizes quoted on request.

Price includes 12 sets of black and orange envelopes.

6½x8½, per dozen, including 12 sets of envelopes..... **$2.10**
8x10, per dozen, " " " " **3.00**
11x14, per dozen, " " " " **7.25**

The practice of packing the plates in paper envelopes has been discontinued, as the contact of paper affects the sensitized surface and injures their keeping qualities.

When it is desired to take an X-Ray photograph, take a plate from the box (in the dark room) and place it in the black envelope with the film side of plate facing the smooth side of envelope; this, in turn, is placed in the orange envelope, flap end first and with the smooth side of black envelope facing the smooth side of orange envelope. By this means the physician is able to tell when the plate is right side up.

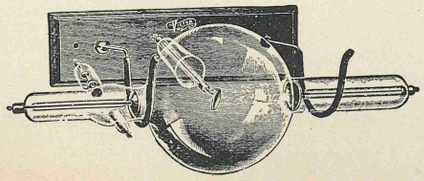
INTENSIFYING SCREENS

Intensifying Screens, (Tungstate of Calcium) per square inch..... **$0.15**

The Intensifying Screen is advantageous to the radiographer *in reducing the time of exposure.* The screens produce a blue fluorescence when exposed to the X-Rays and, when one is placed on each side of the photographic plate with the sensitized surfaces facing each other, assist in decomposing the chemical composition of the emulsion on the plate.

On account of the coarse grain of these screens, the contrast of the negatives is not so great and their application is limited to ordinary diagnosis, such as fractures, locating foreign bodies, etc.

X-RAY TUBE HANGER

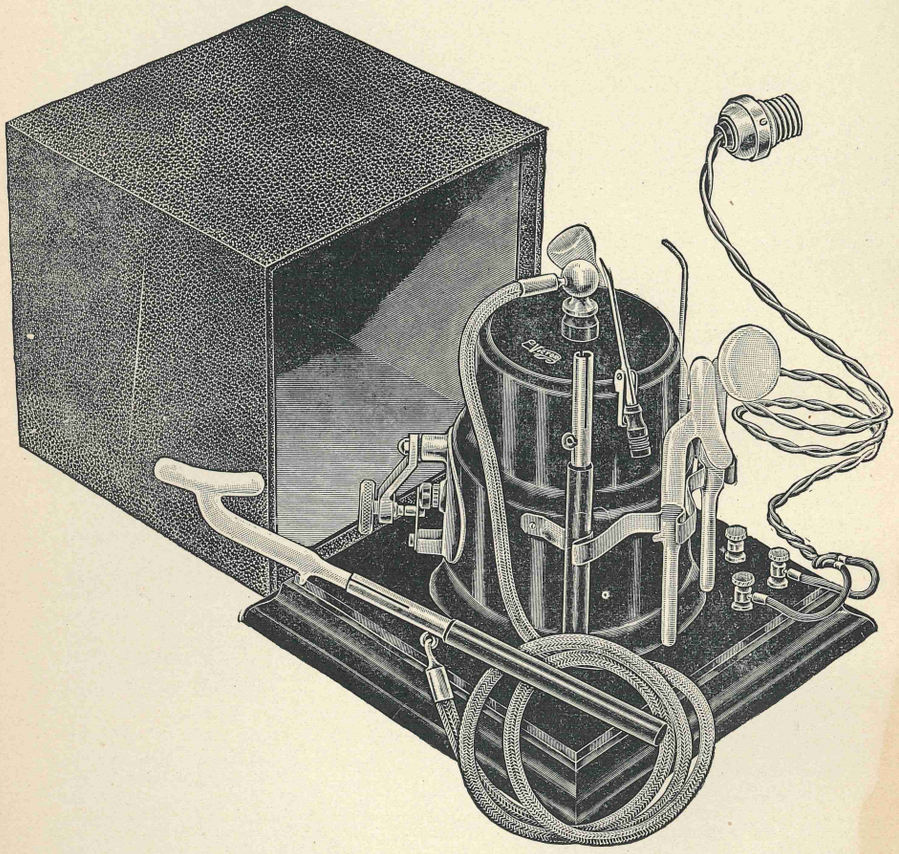


Price of Tube Hanger mounted on finely finished wood base **$1.25**

Every X-Ray operator will appreciate the necessity for having a convenient tube rack or hanger—the illustration plainly indicates the design of the Victor —the metal hooks are covered with soft rubber. Will hold tube of any size up to 9 inches in diameter.

VICTOR GEM HIGH FREQUENCY TREATMENT COIL.

For Vacuum Electrode Treatments Only.



Price complete, with all accessories as shown, - - $25.00

It is hardly conceivable that any practicing physician could be found who is not, at least to some extent, interested in the therapeutic application of high frequency currents, but, quite naturally, many of them hesitate to invest the rather large sum heretofore required in order to obtain any reliable apparatus for the generation of these currents.

In designing the Gem outfit, it has been our idea to place at the disposal of the physician desiring to test for himself, some of the claims made for this modality, a comparatively low-priced apparatus, yet, having sufficient capacity to deliver high frequency currents in large enough volume to do really effective work in vacuum electrode treatments.

This little high frequency oscillator will also be found very useful as an adjunct to heavier and more elaborate X-ray and high frequency equipments. In all ordinary vacuum electrode work, it will be found just as effective as any of the larger outfits, and for this class of work it will be found much more convenient and far more economical in operation. Furthermore its portability makes it invaluable to the general practitioner, as it can easily be carried to the patient's bedside, thus greatly extending its field of usefulness.

RANGE OF THE GEM OUTFIT.

This coil is capable of breaking down an air gap of one inch, this being the extreme distance across the adjustable gap at the main terminals. The volume of energy transformed is sufficient to excite all vacuum electrodes ordinarily met with, regardless of shape or size. This, we believe, cannot be truthfully said of any similar apparatus heretofore offered at anything like this figure.

We do not claim that the Gem outfit can be used for X-ray work of any kind, neither will it deliver high frequency currents in sufficient volume for general D'Arsonvalization as in Auto Condensation, Auto Conduction, etc. If these heavier currents are desired, we recommend the larger type of Victor high frequency apparatus, upon which we will gladly send literature on application.

MANIPULATION.

The connections and regulation of the current are so simple as to hardly require explanation. On the right hand side of the coil will be found three ordinary binding posts marked "110," "0" and "104" respectively. If the 110 volt direct current is available, connect the attachment cords to "110" and "0". If the alternating current is to be used, connect the attachment cords to "104" and "0".

The current is regulated solely by a knurled thumb screw shown on the left hand side of the coil. Turning this to the right, increases the intensity of the current and turning it to the left, vice versa.

ACCESSORIES.

With these outfits are furnished one pair of attachment cords for connection to any electric light socket, one extra heavy high frequency electrode cord, one electrode handle and four vacuum electrodes, viz., external throat, surface (for general application), urethal and eye.

WEIGHT AND DIMENSIONS.

The Gem Coil, including all electrodes, handle, attachment cords and protecting case, weighs only five pounds.

The base is ten inches square over all and the machine with the cover in place is ten inches high.

CONSTRUCTION.

The same material and construction are used in the Gem outfit as will be found in the larger sizes of Victor high frequency apparatus. The transformer is insulated with the regular high potential insulation and in addition is encased in an air tight compartment and filled with a waxlike compound, the air being extracted from this compound by a special process, giving as perfect an insulation as possible.

The condenser is made of lead foil and the highest grade of India Mica.

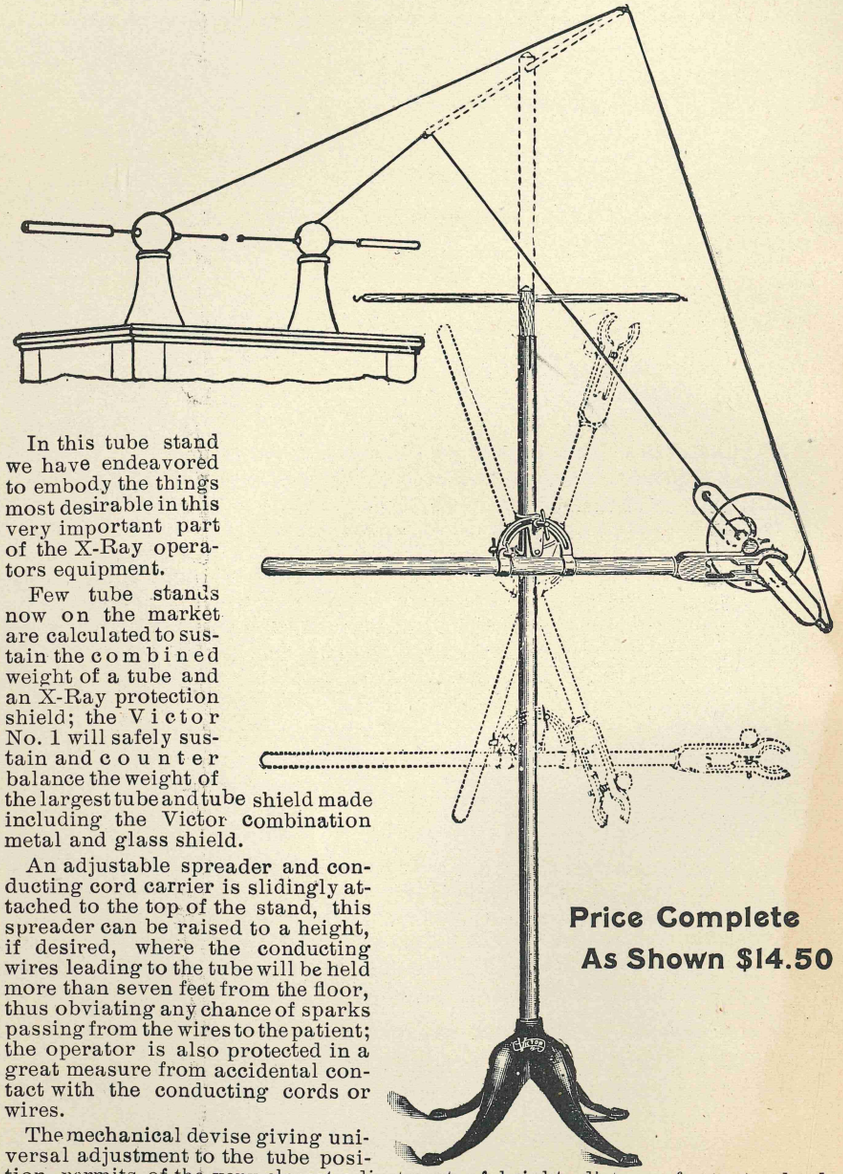
The contact points on the spark gap regulator are made up of the best alloy of non-fusible metals that is obtainable. These points should last, at the least possible calculation, from eighteen months to two years and they can be renewed for a few cents and put on the machine in less than a minute's time.

FINISH.

The Gem outfit is attractive in design, the transformer, condenser, etc., being enclosed in a hard rubber hood or bonnet and heavy brass spring clips surrounding the coil for holding the handle, electrodes, etc.

The protecting case is substantially made of wood and covered with a high grade of black leatherette.

VICTOR NO. 1 TUBE STAND



In this tube stand we have endeavored to embody the things most desirable in this very important part of the X-Ray operators equipment.

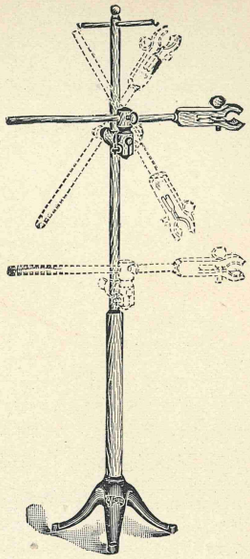
Few tube stands now on the market are calculated to sustain the combined weight of a tube and an X-Ray protection shield; the Victor No. 1 will safely sustain and counter balance the weight of the largest tube and tube shield made including the Victor combination metal and glass shield.

An adjustable spreader and conducting cord carrier is slidingly attached to the top of the stand, this spreader can be raised to a height, if desired, where the conducting wires leading to the tube will be held more than seven feet from the floor, thus obviating any chance of sparks passing from the wires to the patient; the operator is also protected in a great measure from accidental contact with the conducting cords or wires.

Price Complete As Shown $14.50

The mechanical devise giving universal adjustment to the tube position, permits of the very closest adjustment of height, distance from standard, and angle, works with perfect smoothness, and will appeal especially because of its easy and convenient manipulation.

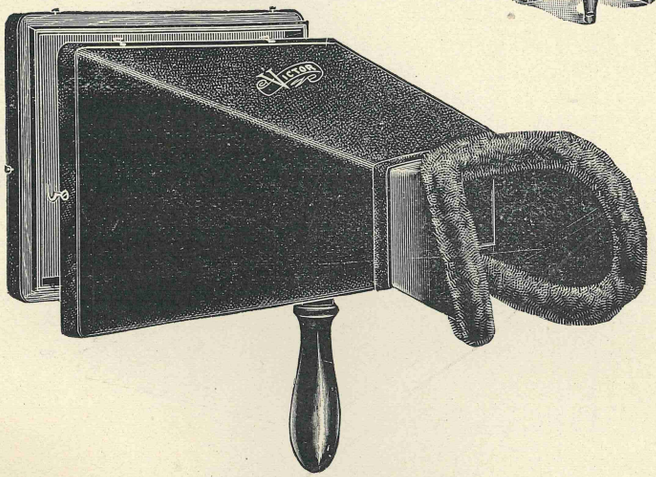
VICTOR No. 2 FLOOR TUBE STAND



This is a well made Stand with heavy metal base, hardwood standard and clamp. Provision is made for both vertical and lateral adjustment.

Price..... **$8.00**

FLUOROSCOPES

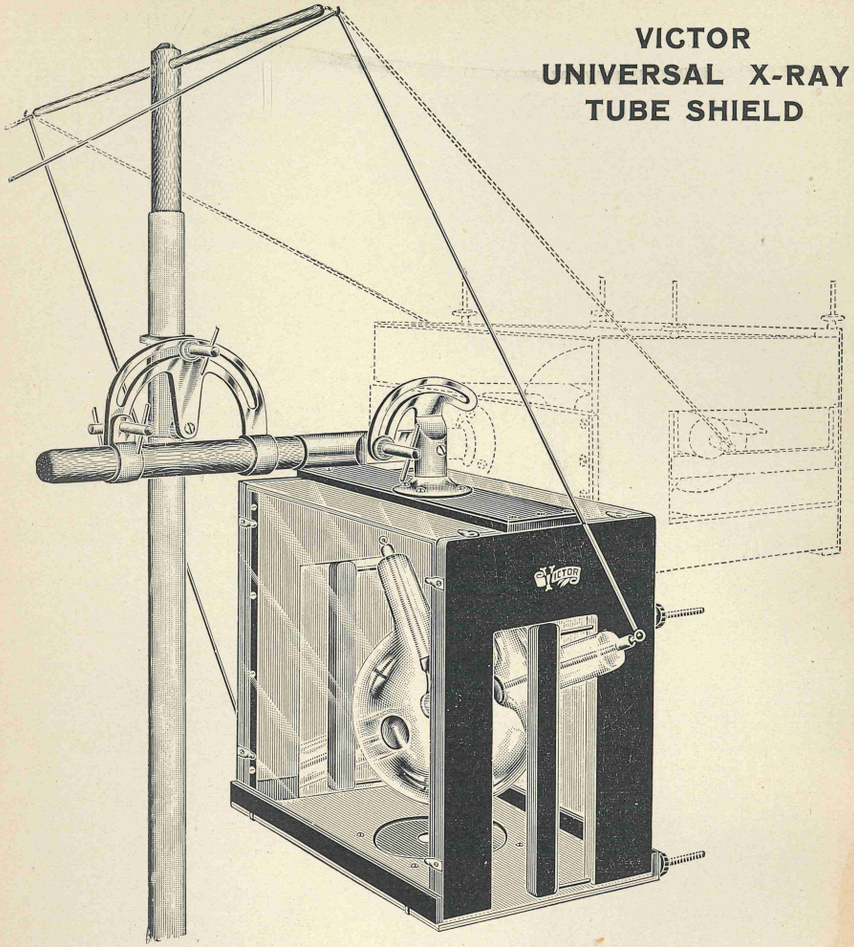


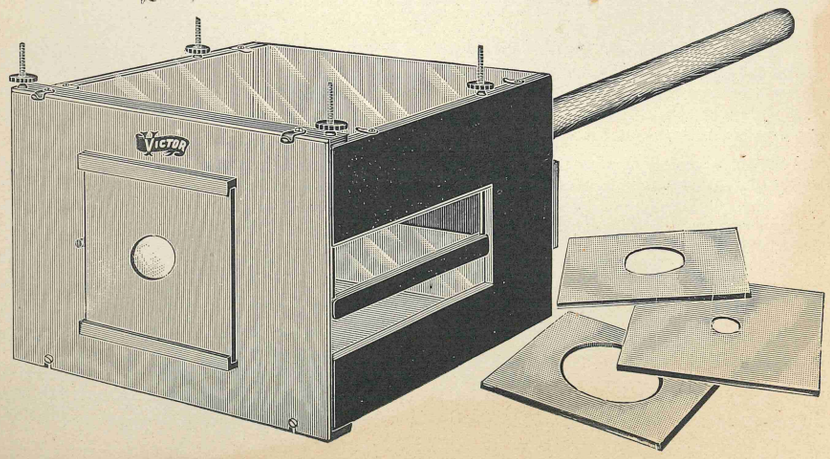
In purchasing an X-Ray equipment, no greater mistake could be made than to purchase a cheap Fluoroscope having a poor screen, and owing to the cost of the materials composing the screen, and that there is no adequate substitute for them it is impossible to produce a really good and durable Fluoroscope at a lower figure than the amount asked for the Victor.

Protection—For the benefit of those who desire to avail themselves of every possible means for protection against unpleasant consequences from frequent exposure to the rays, we have devised a small lead glass shield which fits in the Fluoroscope, being placed **behind** the screen but in front of the eyes, this in no way obscures the image on the screen, but is a great protection to the eyes. In addition to this we will furnish when desired, an opaque, impregnated rubber apron, which attaches at a point on the Fluoroscope just in front of the handle and hangs in such a position as to protect the hand and lower part of the operator's face.

Price of Victor Best Fluoroscope, 5 x 7 with Barium Platinum Cyanide Screen.....	**$15.00**
Price of same with lead glass protection shield	**15.90**
Price of same with lead glass shield and opaque rubber apron.....	**16.30**

VICTOR UNIVERSAL X-RAY TUBE SHIELD





VICTOR UNIVERSAL X-RAY TUBE SHIELD

In designing the Victor Universal X-Ray Tube Shield we have succeeded in producing a protection device which really gives adequate protection to both patient and operator, while allowing the operator an unobstructed view of the entire tube at all times, and enabling him to manipulate his vacuum regulator while the tube is in use and without interrupting the treatment.

X-Ray operators are familiar with the expensive and cumbersome cabinet devices designed to either completely surround the patient and the tube or to afford protection to the operator after the tube is in operation. These devices fall far short of the desired result, for the reason, that in the first place they afford no protection to the patient, and only a partial protection to the operator as he must come out from under cover, so to speak, in order to manipulate the tube.

Attention is called to the following special features, which we believe make the Victor Universal Shield the most practical protection device yet offered the profession.

The two sides are of lead glass, enabling the operator to view the tube and judge of its condition while it is in operation.

The ends and front are made of opaque material, the only unprotected area being the opening in the diaphragm, and the comparatively small slots at the ends. These slot openings are in the attenuated part of the X-Ray field and but very few rays escape through them.

The circular opening in the front of the shield is made adjustable in size by the use of detachable plates, provided with different sized openings, the largest opening being approximately four inches in diameter. Four extra diaphragms are supplied, having openings of various diameters. Suitable means are provided to enable the operator to quickly and conveniently attach and detach the diaphragms.

The glass sides and top, although held firmly in position, can be readily removed, if desired. The front is held in place by strong spring clips, and can be as easily removed as the glass sides.

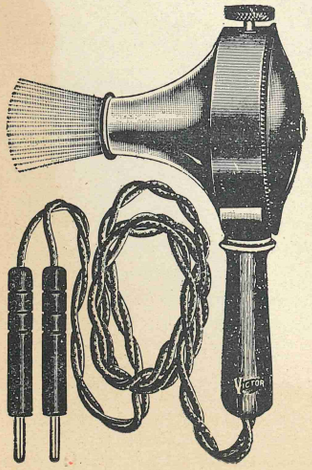
The tube is held in place in the shield by means of special clamps. When the tube is placed within the shield the elongated projecting tube ends pass through the end slots. These slots extend almost from top to bottom of the shield and permit of the tube being tilted to any angle desired, so as to secure the correct focus. The clamps are then drawn firmly against the projecting ends of the tubes, and held in place by tightening thumb screws.

The illustration shows the shield being supported by the Victor tube stand. It can, however, be used in connection with any tube stand, designed to sustain this amount of weight.

It will be noticed that an independent adjustment is provided on the shield at the point where it attaches to the wooden rod. This adjustment makes it possible to place and hold the shield at any angle, from vertical to horizontal.

The Victor Shield will contain X-Ray tubes of any shape and size up to and including seven inches in diameter.

Price of Shield complete including extra diaphragms..... .....**$40.00**
Price of Shield with American plate glass instead of imported lead glass **28.00**



ULTRA-VIOLET LAMP

Specially designed for attachment to our large High Frequency and X- Ray Cabinet.

Gives almost pure ultra-violet light.

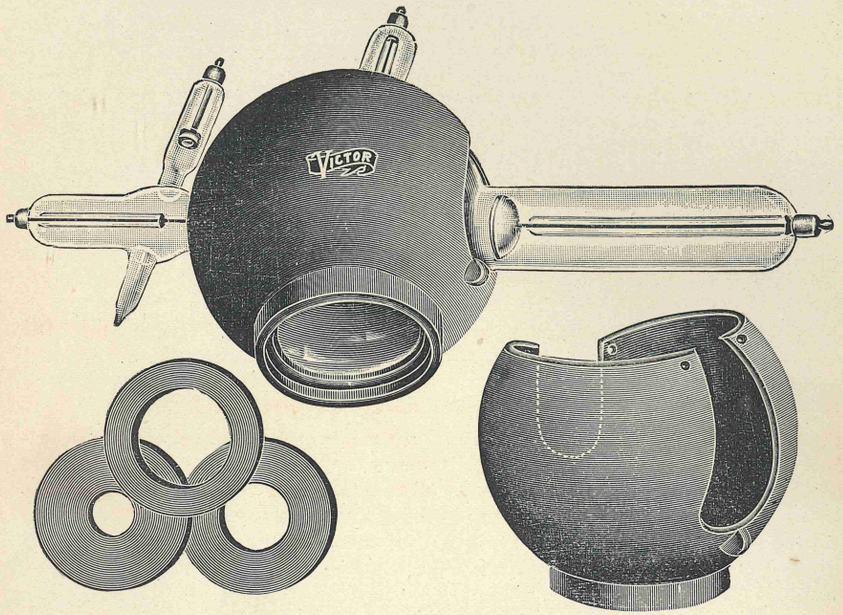
Is provided with a quartz compression lens, a very important feature.

Has regulator to adjust the volume of the rays delivered.

Is perfectly insulated and entirely inclosed.

Price.....**$18.00**

VICTOR PROTECTIVE X-RAY TUBE SHIELD No. 2



Price of Shield with three Diaphragms $5.00

This shield affords protection to both the operator and the patient to a very high degree. It is made of a special composition, consisting largely of rubber and lead. With a tube of medium vacuum, it is practically opaque to the rays, and even where a large amount of energy is being converted in a tube of high vacuum, but a comparatively small percentage of the rays penetrate and pass through it.

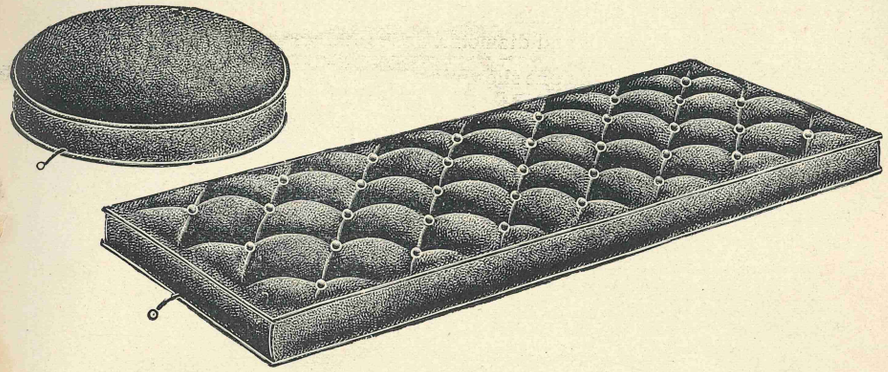
As will be seen, the shield covers over seven-eighths of the tube, shutting out all of the rays, excepting those which are permitted to pass through the circular opening, which, of course, occurs in the active part of the field.

Three separate detachable diaphragms, each having different sized openings, are supplied with the shield. These diaphragms are interchangeable and can be fitted into the shield opening and detached without difficulty. These diaphragms are semi-hard and impregnated with opaque material, same as the body of the shield.

As there are no all-metal parts, the x-ray tube may be placed, if desired, almost in actual contact with the patient without danger of sparking.

The shield is made to snugly fit a six inch tube and requires no special fastening when used with tubes of this size. Provision is made so that when the shield is used to cover a smaller tube, it can be held in position by means of laces or rubber bands.

CUSHIONS FOR AUTO CONDENSATION



Price of round seat cushion **$10.00**
Price of couch cushion **30.00**

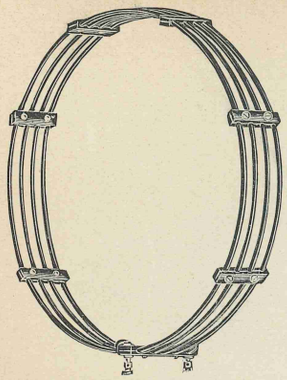
VICTOR CUSHIONS FOR AUTO CONDENSATION

We cannot too strongly impress upon the mind of the physician the necessity for using cushions of proper design and construction, if the best results are to be obtained in Auto Condensation. The two most important points are the thickness of the cushion and the material used in upholstering it. The cushion should not be less than three inches in thickness and the material used in upholstering must be a perfect insulator against the high frequency currents, must be resillient, must be elastic, but not permanently compressible. The material answering most nearly all of these requirements is Japanese silk floss of the highest grade; enough of the floss must be used to make it impossible for the bony protuberances to displace and compress the floss sufficiently so that the distance through the cushion at any point from the patient to the metal plate beneath is less than the distance which the potential of the current being used is capable of jumping, otherwise the patient is subjected to disagreeable sparking, or the current passes in a fine effluve or spray from the patient thus preventing anything like complete saturation. If it is borne in mind that to all intents and purposes the patient forms one coating of a condenser and the metal plate the other coating, the cushion being the di-electric, the necessity for using a perfect insulating material in the cushion will be at once apparent.

Many failures to produce expected results in auto condensation are unquestionably due to defective cushions. It may be stated as a fact that in cases of abnormal blood pressure the pressure will unfailingly be reduced to a greater or lesser extent in every case, if current of sufficient strength and potential is used and the cushion is correctly designed and made of proper material.

As before stated, Victor cushions are properly upholstered with the best grade of Japanese silk floss. Specially treated pantasote is used for the outer covering; a metal plate is properly placed on the under side of the cushion, this plate being also covered with the pantasote.

The round seat cushion is eighteen inches in diameter, and may be used on any chair in which there is no metal. The large cushion is sixty inches long and twenty-two inches wide and may be laid, when in use, on a couch, bed, or operating table, so long as care is observed to keep it at a safe distance from anything metallic.

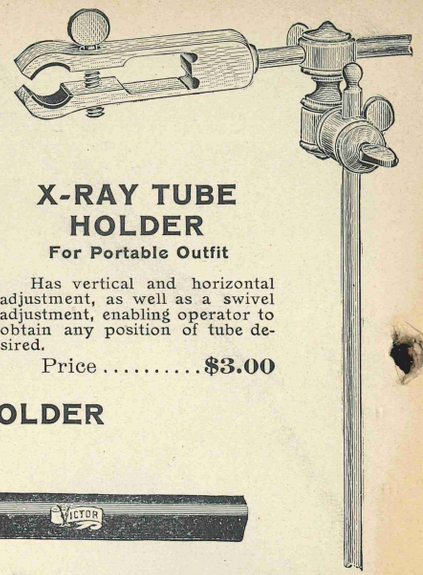


AUTO CONDUCTION RINGS

These rings can be supplied of any desired length and diameter.

The one shown is of sufficient size to be slipped over the shoulder of an adult.

Price of rings as shown..... **$5.50**



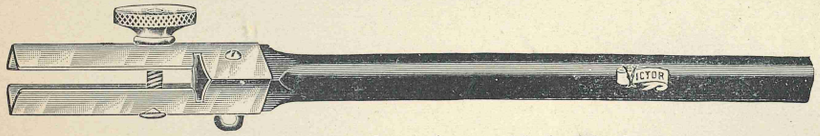
X-RAY TUBE HOLDER

For Portable Outfit

Has vertical and horizontal adjustment, as well as a swivel adjustment, enabling operator to obtain any position of tube desired.

Price..... **$3.00**

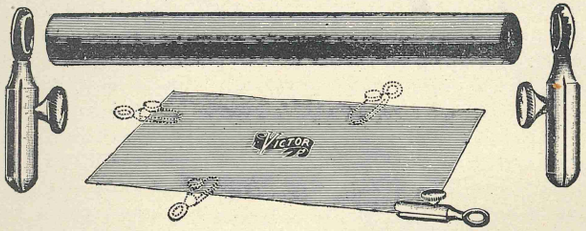
VACUUM ELECTRODE HOLDER



This holder is 15 inches long, is provided with ebony handle and has adjustable spring jaws. Admirably adapted to clamp and firmly grip the electrodes, the stems of which are not of a uniform size. Price..... **$1.50**

VICTOR D'ARSONVAL ELECTRODE

(FOR LOCAL TREATMENT)



DIMENSIONS 6 x 9½ INCHES.

Price, as shown, including six sheets of metal foil holder and two connectors..... **$ .85**
Price of connectors only, per pair..... **.50**
Price of metal foil only, (six sheets)..... **.35**

This electrode will fill a well recognized demand for a suitable, inexpensive electrode for the proper application of local d'Arsonvalization.

Several electrodes, designed for this purpose, have been placed on the market, but they were either to clumsy for convenience or the price was prohibitive.

The Victor d'Arsonval Electrode will answer all requirements in the application of the d'Arsonval high frequency current in local conditions.

The electrode consists of two sheets of metal foil, of sufficient thickness to insure reasonable durability and at the same time being flexible enough to mold themselves to any contour of the body, thereby insuring perfect contact which is so necessary to get the best results from this treatment. Two connectors are provided for attaching the foil to the conducting cords. As will be noted in the illustration, these connectors are detachable. In case they should accidentally be torn away from the foil and it becomes necessary to make a new connection elsewhere, or to use a new piece, loosen the thumbscrew on the connector, take out the torn part, slip the connector on to a new place along the edge of the foil and tighten the thumbscrew.

The adaptations of this electrode are many and we cite one case, viz: The application is treating rheumatism of the joints. The electrodes should be applied anterior and posterior, respectively, and shaped to conform as nearly as possible with the part to be treated, care being used in not allowing the two metals to come in contact with one another. The foil may be held in place by a few turns of bandaging gauze. The conducting cords are then fastened to the connectors and the current may be applied at any frequency.

Victor High Frequency Brush or Spray Electrode

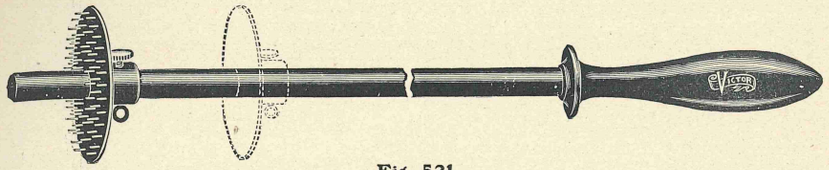


Fig. 521

Price as shown..... **$2.25**

In administering the high frequency spray or brush discharge, it is desirable and important to be able to regulate and vary the intensity to a nicety, from a barely perceptible effluve to a point just short of actual sparking. This is best accomplished by varying the distance intervening between patient and electrode. The design of the Victor Spray Electrode is such that the distance from patient to discharge disc may be fixed and **maintained** automatically whenever desired.

The handle and central rod are of insulating material, and the rod passes through a metalic disc from which concentrically arranged pins project. The disc can be easily and freely moved from end to end of the insulating rod, a thumb set screw enabling the operator to fix it firmly at any point along the rod at will.

After determining the distance which it is desired to maintain between patient and electrode, the disc is placed the necessary distance from the outer end of the insulating rod and the set screw tightened, now when the end of the rod is placed against the patients body the desired result is attained and it will be quite apparent the discharge disc cannot be accidently shoved nearer to the body.

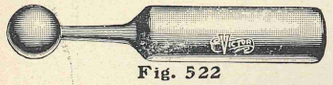


Fig. 522

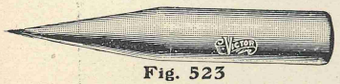


Fig. 523

Fig. 522 Small metal ball electrode for localizing high frequency spray Price..... **$ .75**

Fig. 523 Metal point electrode for convenient administration of convective discharge Price..... **.75**

Both the above electrodes are adapted to be used with the Victor vacuum electrode handle, shown elsewhere in this catalog.

VACUUM ELECTRODES

Patented July 1899 and October 1901

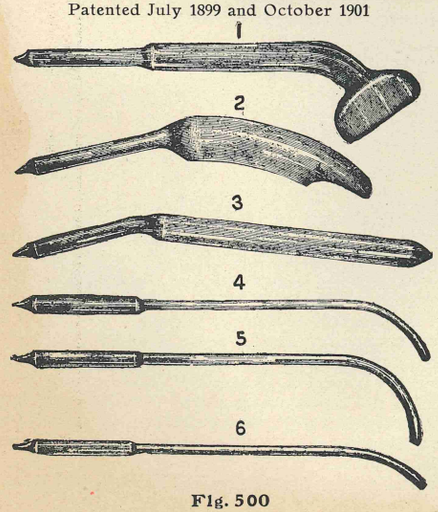


Fig. 500

The shapes of these tubes are much improved upon, made of the proper thickness of glass, each one correctly curved for the cavity they are designed, and can be used without fear of breaking in the cavity.

The small seal-off is now made on top of the handle, protected by a rubber cap cemented on and is less liable to puncture. The set contains the following tubes, one each for vaginal, rectum, throat, nose, urethal and general application.

Set packed in box..... **$4.25**
Tubes separate..... **.75**
Victor electrode handle **1.50**

(See illustration of Victor Vacuum Electrode Handle elsewhere in this Catalog.)

FULGERATION ELECTRODE

As suggested by Dr. A. C. Geyser.

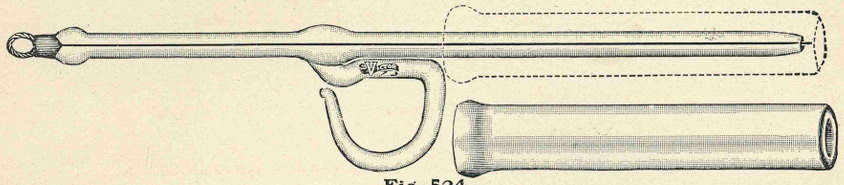


Fig. 524

Price..... **$2.50**

Fulgeration Electrode as the name implies this electrode acts with lightning-like rapidity. It is intended to destroy small growths, such as warts, moles, portwine marks, vascular neavi and the smaller epithelioma especially in their incipiency. The electrode is made in two parts, the outer or sheath consisting of a glass tube with ends or lips slightly everted; the inner portion consists of a similar glass tube into which a copper wire has been fused. At the upper end of the inner portion a glass ring is attached, through which the index finger of the right hand is passed while the thumb and middle finger holds the sheath. When the inner portion is plunged at full length into its sheath, a glass collar is so arranged upon the inner portion as to prevent its passage at a point one thirty-second of an inch from the bottom of the outer sheath.

For the removal of a lesion, the outer sheath is placed over the growth, while the inner is drawn upward just beyond sparking distance, about two inches. The end of the copper wire is attached to the high-frequency current. When everything is in readiness, suddenly plunge the electrode downward; allow it to remain for from one-quarter to one second, then with the index finger withdraw the inner tube as before. Select a new spot upon the same lesion until the entire surface of the lesion has been covered, when it has a blanched appearance. At least one week should elapse before a second treatment upon the same lesion is deemed necessary.

"CATAPHORIC" ELECTRODE

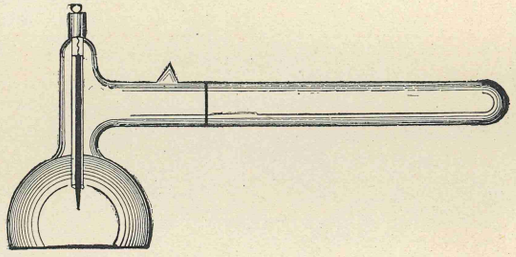


Fig. 509

High Frequency Cataphoric Electrode as designed by Dr. W. J. Morton
Price..... **$3.00**

Dr. Morton's high potention, high frequency Cataphoric Electrode is designed to secure the introduction into the living tissues of any medicament by means of the electric pressure and directional flow of high potential current. The author states the results may also be due to anaphoric action.

The edge of the electrode is surrounded by the glass blowers process, with an elevated circular and inverted lip about one-sixteenth to one-eighth of an inch high. Together with the flat floor of the bulb the lip forms a shallow cup into which may be set at will, discs of asbestos, pasteboard or other porous material. The porous material is now saturated with the medicine desired to be introduced through the patients skin or mucous membranes and the electrode is applied to the part of the body desired.

Medicaments thus used may be detected quickly in the patient's saliva, blood and urine.

Partly Insulated Vacuum Cavity Electrodes

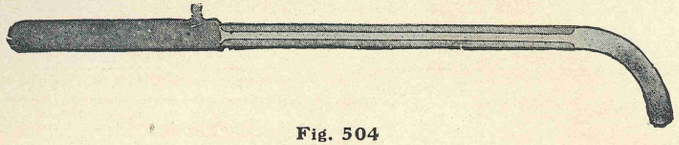


Fig. 504

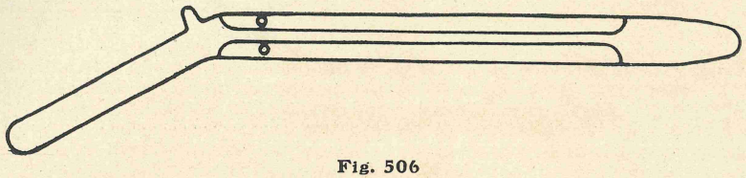


Fig. 506

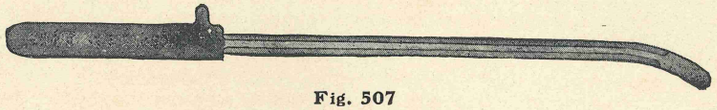


Fig. 507

Fig. 515

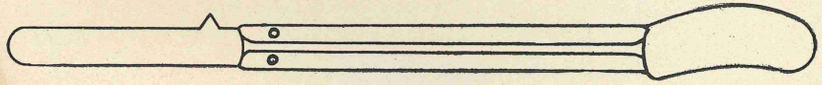


Fig. 516

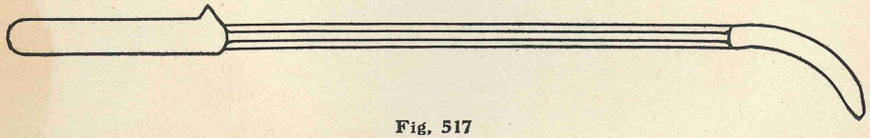


Fig. 517

Cavity Electrodes, partly insulated, deliver current at point of application only, Fig. 504, Throat; 506, Rectal; 507, Nasal; 515, Vaginal; 516, Prostatic; 517, Urethal. Price each..... **$1.50**

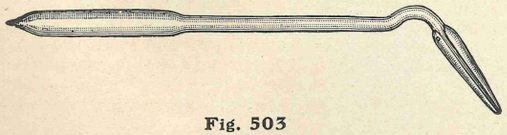


Fig. 503

Fig. 503.—Cavity Electrode, Ear, partly insulated, delivers current at point of application only..... **$1.50**

VACUUM ELECTRODES
URETHRAL

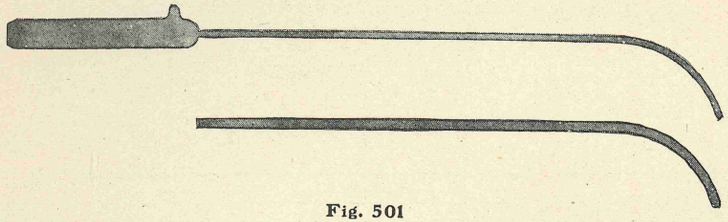


Fig. 501

Special Urethral Electrodes, ends tapered, made from heavy glass tubing, well annealed Nos. 20 and 28 French scale carried in stock.
Price each... ..... **$ .75**

VAGINAL ELECTRODES

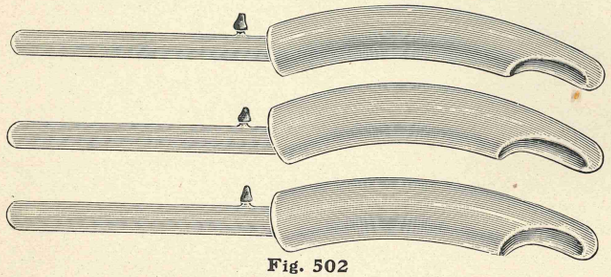


Fig. 502

Fig. 502—Vaginal Electrodes suggested by Dr. W. B. Snow. Price each **$ .75**

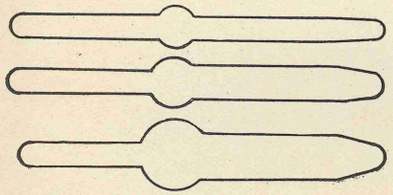


Fig. 518

Hemorrhoid electrodes for internal and external treatment, three sizes, ⅝ in., ¾ in., ⅞ in.
Price each.....**$ .75**

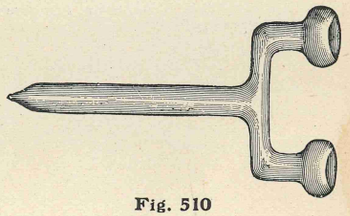


Fig. 510

Double eye Electrode.....**$1.00**
Single eye Electrode ..... **.75**

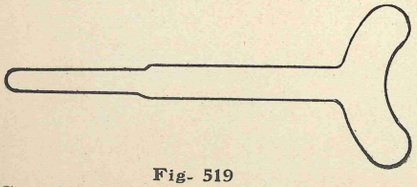


Fig. 519
Snow's external throat Electrode.
Price.....**$1.00**

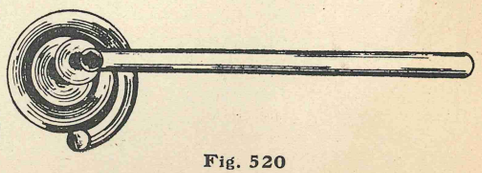
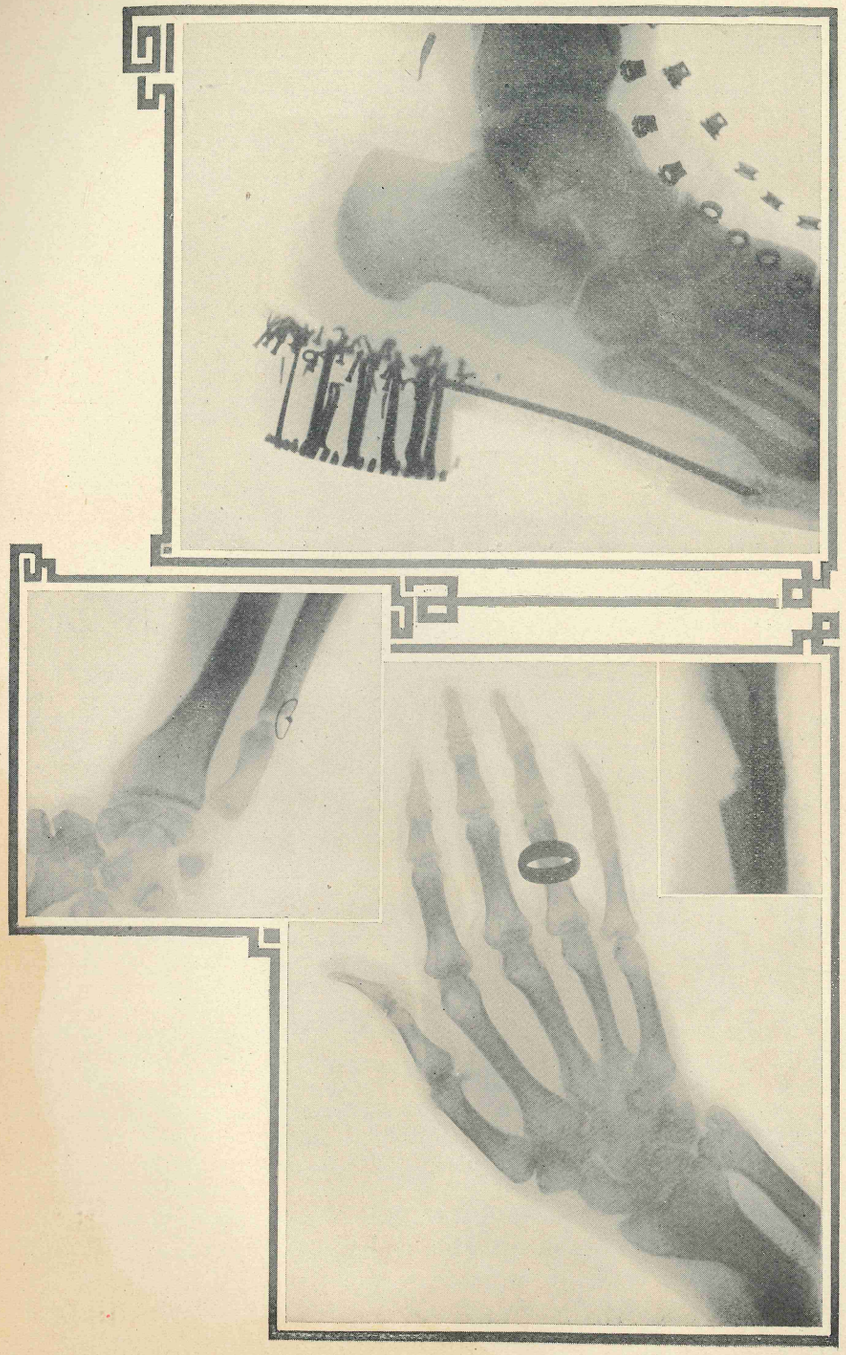
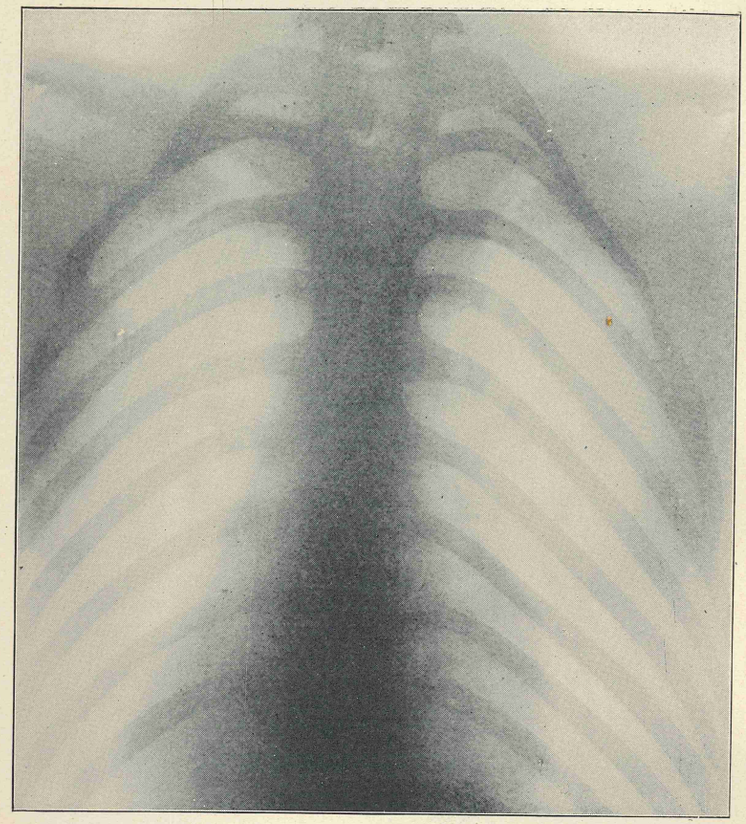


Fig. 520
Single spiral Electrode for treating large surface. Price.....**$3.50**



RADIOGRAPHS TAKEN WITH VICTOR PORTABLE OUTFIT



TAKEN WITH VICTOR PORTABLE OUTFIT

BOOKS

We are prepared to furnish at Publishers' prices any book desired; in cases where our customers leave the selection to us, we supply the latest works by authors of recognized authority.

OUR GUARANTEE

All of our X-Ray and High Frequency Outfits are subjected to long and severe tests before they leave the factory, and are backed by our usual two years' guarantee against burn outs or "breakdowns" caused by defective insulation or workmanship.

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